

# The importance of detection and percutaneous closure of patent foramen ovale during the coronavirus disease 2019 pandemic

Piotr Szymański, Magdalena Lipczyńska, Piotr Lipiec, Andrzej Gackowski

**Authors' reply** We would like to thank Rajendram et al<sup>1</sup> for their interest in our coronavirus disease 2019 (COVID-19) echocardiographic guidelines in the context of screening for patent foramen ovale (PFO) in patients with COVID-19.<sup>2</sup> However, we disagree with the hypothesis that screening for PFO with bubble-contrast echocardiography and percutaneous closure of PFO should be continued during the COVID-19 pandemic.<sup>1</sup>

Rajendram et al<sup>1</sup> stated that, in selected high-risk patients with COVID-19, percutaneous closure of PFO could markedly improve hypoxia, reduce the need for invasive ventilation, and help to prevent paradoxical embolism. In our opinion, whereas the right-to-left shunt through PFO may, to some extent, contribute to hypoxia, it is certainly not the actual cause of the patient's grave clinical status in acute respiratory distress syndrome (ARDS) induced by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. Evidence concerning the prognostic significance of the presence of PFO in ARDS is equivocal.<sup>3</sup> A right-to-left shunt may be even protective against right ventricular dysfunction in acute ARDS-associated pulmonary. Its closure may therefore potentially lead to deterioration of the right ventricular function. Overall, there is no unequivocal evidence coming from well-designed clinical trials, which would demonstrate that PFO closure favorably affects prognosis in patients with severe hypoxia due to ARDS. In patients with severe, resistant hypoxia, veno-venous extracorporeal membrane oxygenation (V-V ECMO) may be considered. The presence of an interatrial shunt may, in fact, be beneficial in V-V ECMO.<sup>5</sup>

As far as secondary stroke prevention by PFO closure is concerned, it has to be kept in mind that the annual risk of stroke due to PFO is low compared with other stroke mechanisms. Therefore, PFO should not be considered a cause of stroke until a thorough workup has excluded alternative mechanisms. Such workup should be postponed in patients with active COVID-19.

In summary, we argue against PFO screening in patients with COVID-19. In our opinion, the "less is more" approach is fully justified both on clinical grounds and to protect medical personnel from the unnecessary risk of SARS-CoV-2 infection.

## ARTICLE INFORMATION

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**CONFLICT OF INTEREST** None declared.

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